

Fig. 1

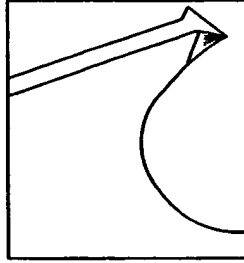


Fig. 2

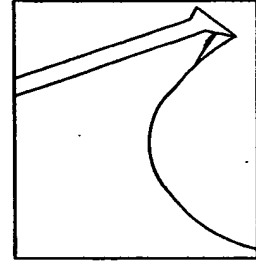


Fig. 3

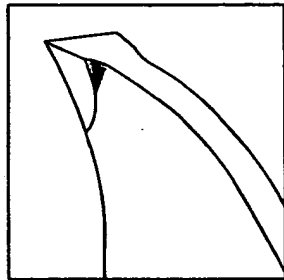


Fig. 4

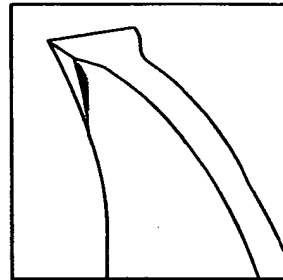


Fig. 5

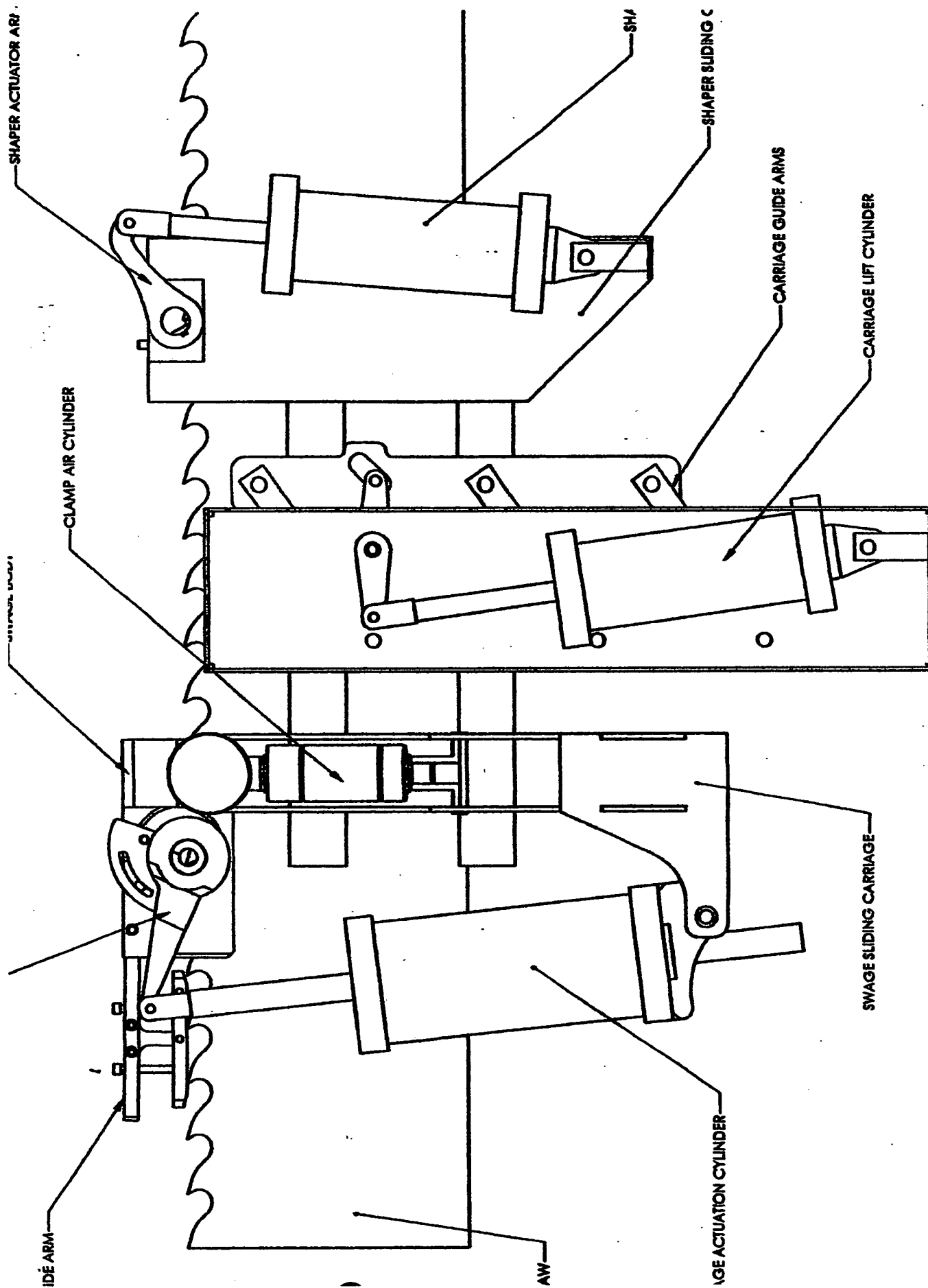
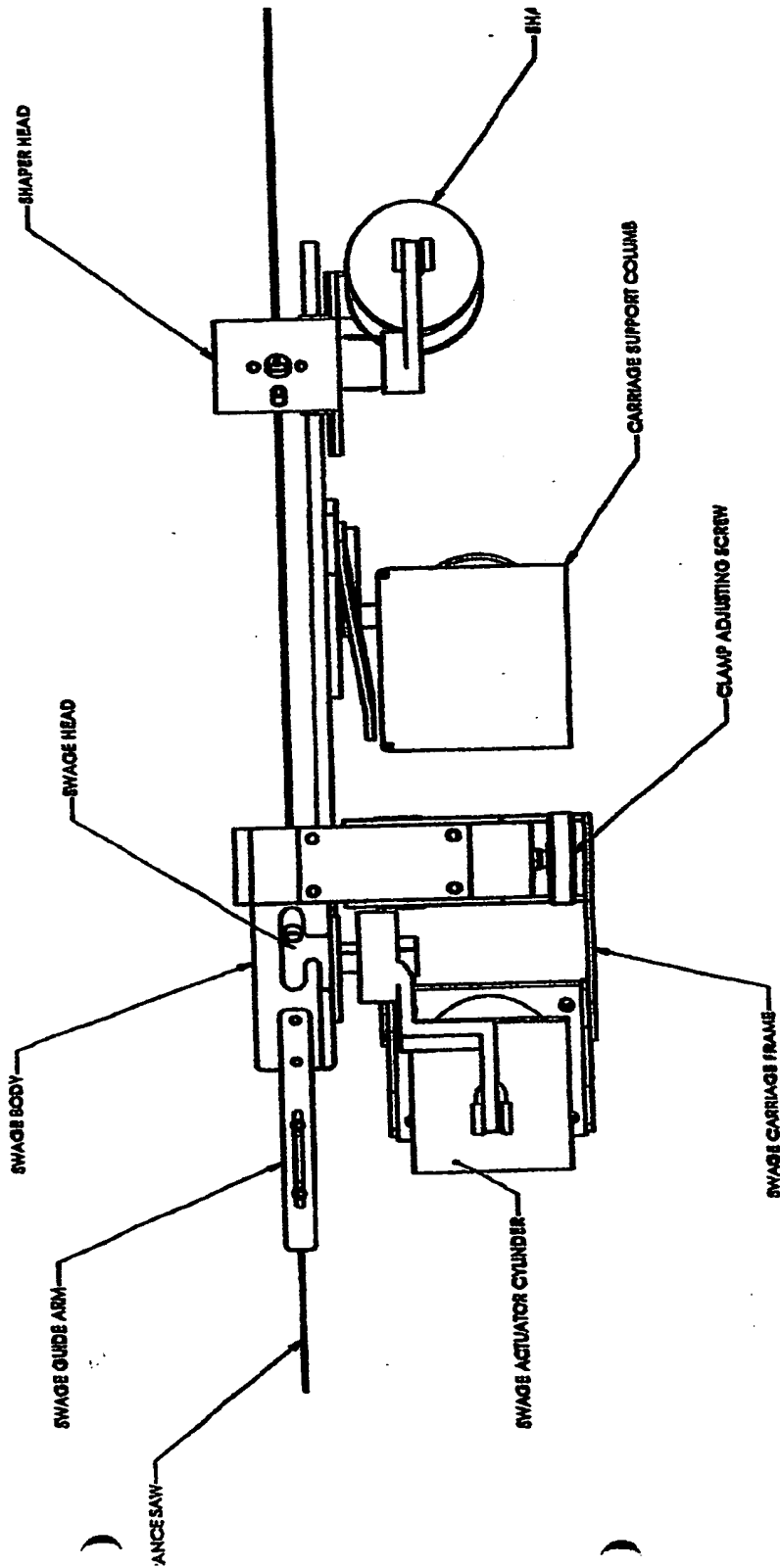


FIG. 6



TOP VIEW
 FIG. 7



TOLERANCES UNLESS OTHERWISE SPECIFIED		DATE MADE / YEAR		DATE		REV		BY	
FRACTIONS: 1/16" 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
DECIMALS: 0.015" 0.030" 0.062" 0.125" 0.250" 0.500" 1.000"		10/11/78		10/11/78		10/11/78		10/11/78	
ANGLES: 15° 30° 45° 60° 90° 120° 135° 150° 180°		10/11/78		10/11/78		10/11/78		10/11/78	
HOLE FINISH: 125 RMS		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 32 RMS		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
WELDING: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
PAINT: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
MATERIAL: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
TOLERANCES: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
SURFACE FINISH: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11/78		10/11/78		10/11/78	
THREADS: 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 1"		10/11/78		10/11					

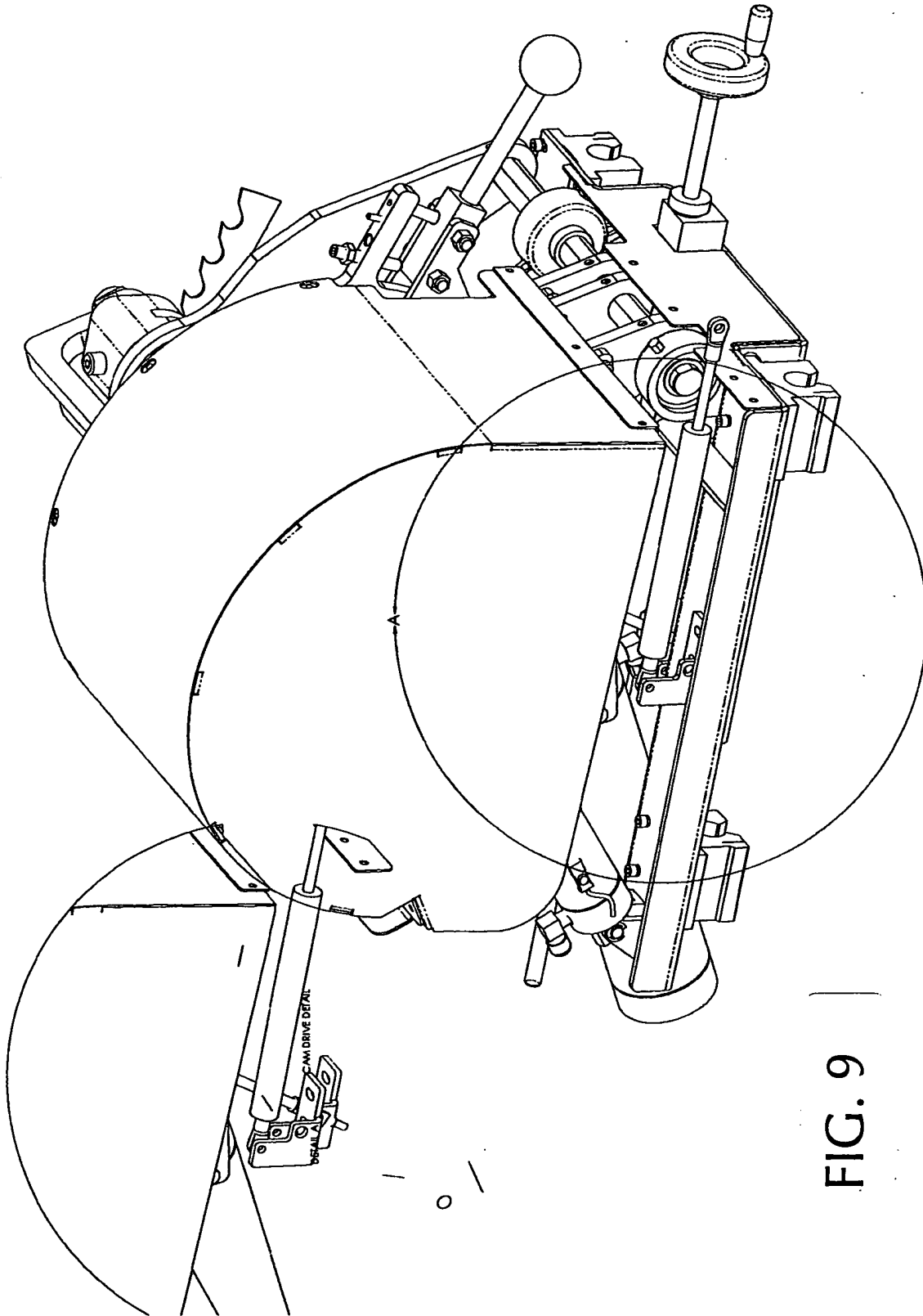


FIG. 9

REV	DATE	DESCRIPTION	BY
1	01/01/00	REVISED	10/01/00

DESIGNER	DATE	BY
10/01/00	10/01/00	10/01/00

MANUFACTURING CO
10/01/00

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	18099	CYLINDER, BIMBA
2	1	18114	CYLINDER EYE
3	1	21146	MOUNTING HEAD, SWAGE
4	1	18263	SWAGE CLAMP MNTG BLOCK
5	2	18284	CLAMP ARM
6	4	9032-C26	CAPSCR. 1/4UNC SOC HD
7	4	9448-C26	WASHER, 1/4" HI COL LOCK
8	4	12199-C26	BUSHING, 5/8 X 3/4 X 1/2 LONG
9	2	12199-C17	BUSHING, 1/2 X 5/8 X 3/8
10	2	12199-C19	BUSHING, 1/2 X 5/8 X 1/2
11	1	21068	CLAMP CYL. MOUNT
12	2	9394-C100	SLDR SCREW, 3/8 DIA.
13	4	9035-C76	CAPSCR. 3/16 UNC SOC HD
14	4	9448-C31	WASHER, 5/16" HI COL LOCK
15	2	7808-C26	ELBOW, 3/8NPT TO 3/8 TUBE
16	1	18122	LINK, CLAMP
17	2	21194	LINK
18	4	9392-C38	SLDR SCREW, 1/4 DIA.
19	1	21212	MUFFLER, 3/8 NPT
20	2	9394-C200	SLDR SCR. 5/8 DIA.
21	1	9395-C200	SLDR SCR. 5/8 DIA.
22	2	9516-C60	NUT, 1/2 UNC ELASTIC LOCK
23	1	9516-C38	NUT, 3/8 UNC ELASTIC LOCK
24	2	12199-C24	BUSHING, 3/8 X 1/2 X 3/8 LONG
25	2	10945-C38	

FIG. 10A

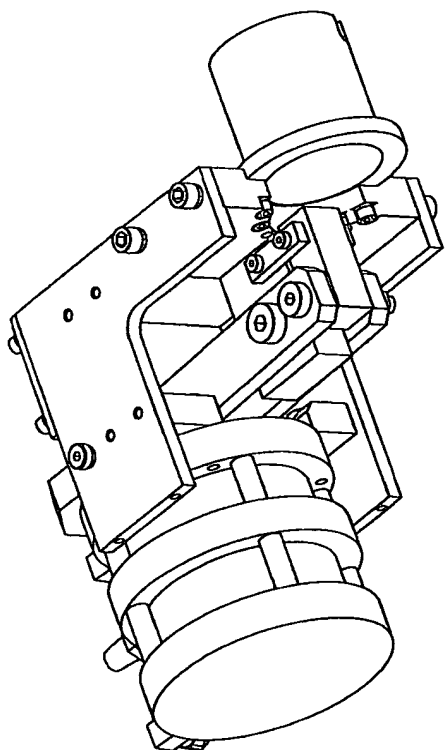
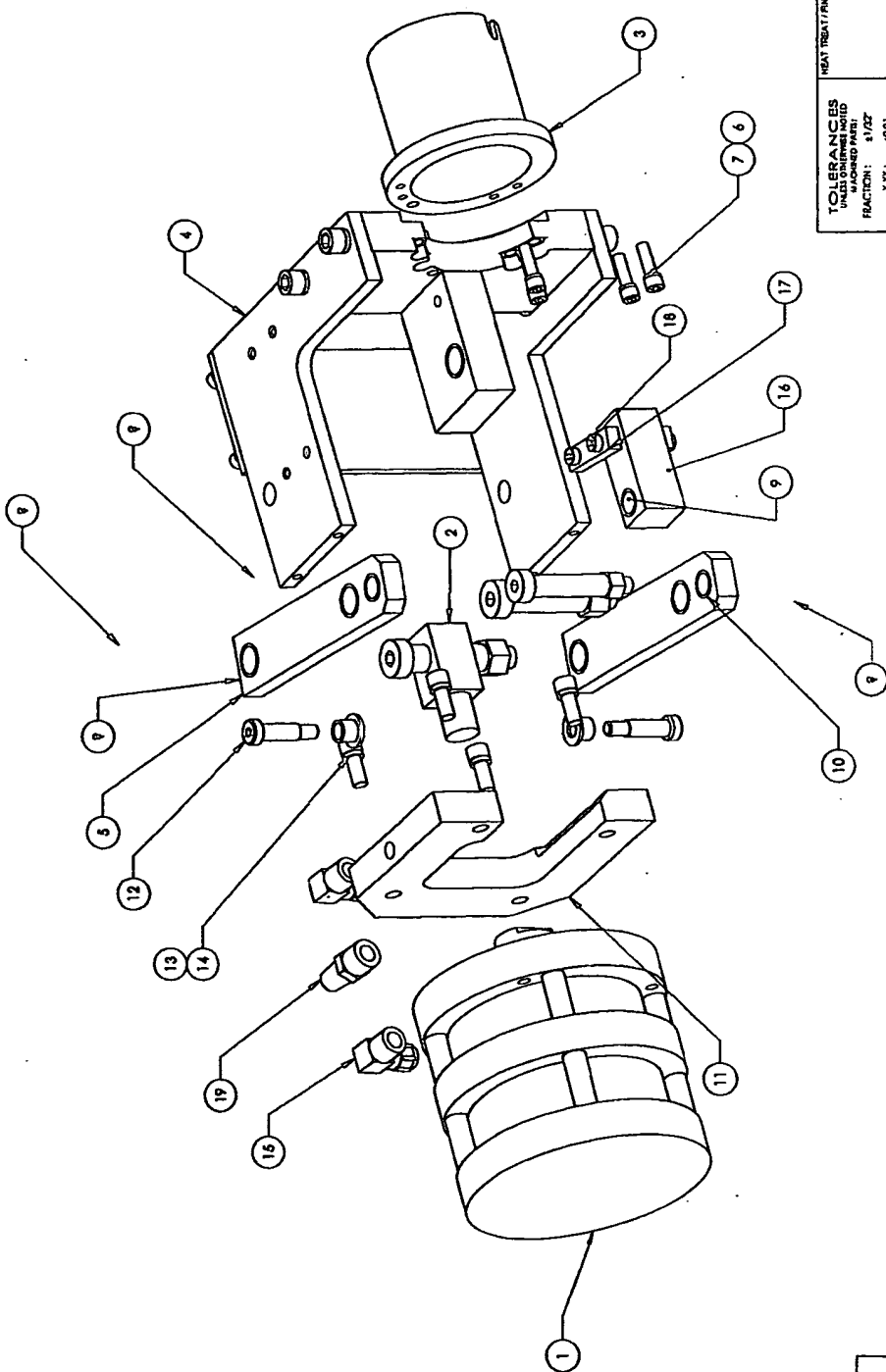


FIG. 10B



REV	DATE	DESCRIPTION	ECN	BY
1	12/1/00	REDESIGNED		JSW
0	12/1/00	INITIAL RELEASE		JSW
REVISIONS				
SCALE	1:2	NAME	SWAGE HEAD MOUNT	
MODEL	SWAGE & SHAPE	DESIGNED BY	JSW	
DRAWN BY	JSW	DATE	12/1/2003	

TOLERANCES UNLESS OTHERWISE SPECIFIED	1/127
FRACTION	1/127
XXX	5001
XXX	5005
MATERIAL	

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EXPLODED VIEW

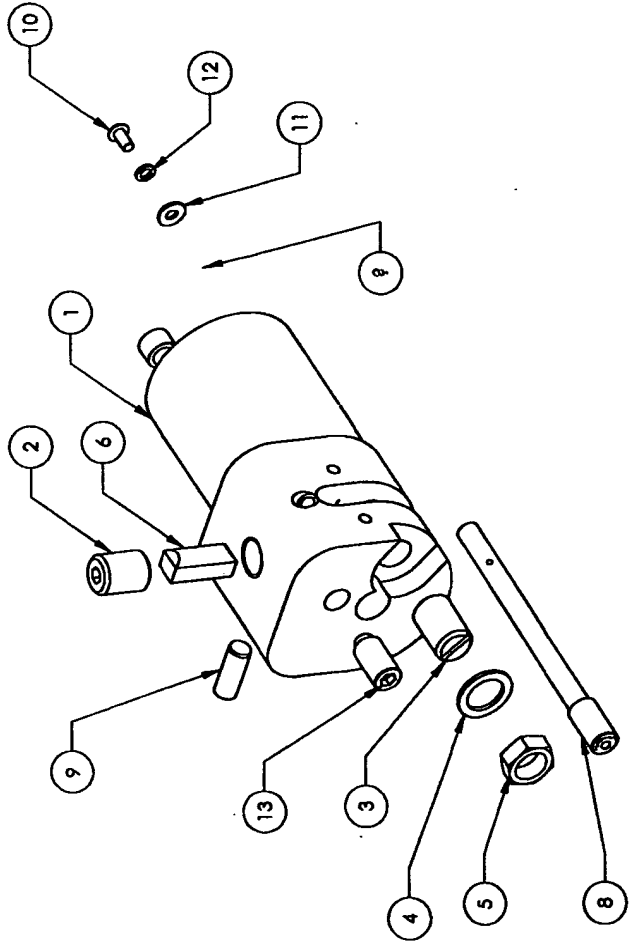


FIG. 11A

REAR VIEW

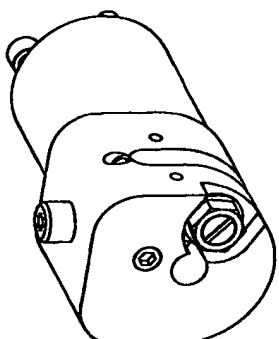
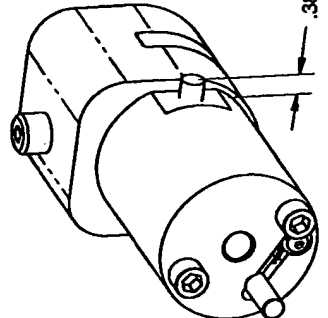



FIG. 11B

FIG. 11C

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	21227	SWAGE HEAD, 5/8" DIA DIE
2	1	113	TOP SCREW, SWAGE ANVIL
3	1	45-C	CLAMP SCREW, STATIONARY
4	1	4072	WASHER, NYLON
5	1	218	NUT, LOCK 11/16-11
6	1	90-C	ANVIL
7	1	18202	SWAGE SAW GUIDE
8	1	21215	ASSM, CLAMP PLUNGER
9	1	10032-C16	PIN, STEEL DOWEL
10	1	9061-C38	CAPSCR, #10 UNC BTN HD
11	1	9443-C10	WASHER, #10 NOM TYPE A PL
12	1	9451-C10	WASHER, #10 HELICAL LOCK
13	1	9251-C	SET SCREW 1/2-UNF HD
14	1	21162	RETAINER CLIP
15	2	9034-C100	CAPSCR, 3/8UNC SOC HD
16	1	CLAMP SPR	SWAGE CLAMP SPRING
17	1	A-110-FOR	DESIGN MANITE NEW

0	12/22/2003	INITIAL RELEASE	XXXX	JSW
REV	DATE	DESCRIPTION	ECN	BY
REVISIONS				
SCALE	1:2	NAME	ASSM, SWAGE HEAD 825	
MOD SWAGE & SHAPE		 MANUFACTURING CO. 2135 N.W. 21ST AVE. PORTLAND, OR 97210 PH: 503-228-6391 FAX: 503-228-6394		
DRAWN BY JSW				
DATE 12/22/2003				
1				

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2135 N.W. 21ST AVE.
PORTLAND, OR 97210
PH: 503-228-8381
FAX: 503-228-8384

SHEET 1 OF 1		C-18066	REV 0
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	9032-C100	CAPSCR. 1/4UNC SOC HD
2	4	9448-C25	WASHER. 1/4" HI COL LOCK
3	1	21174	BEARING. RADIAL
4	1	18078	SWAGE HEAD MOUNT
5	1	21047	SWAGE PLATE

FIG. 12A

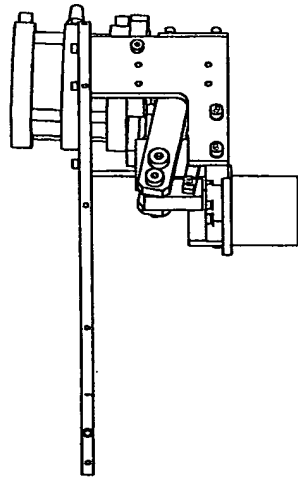


FIG. 12B

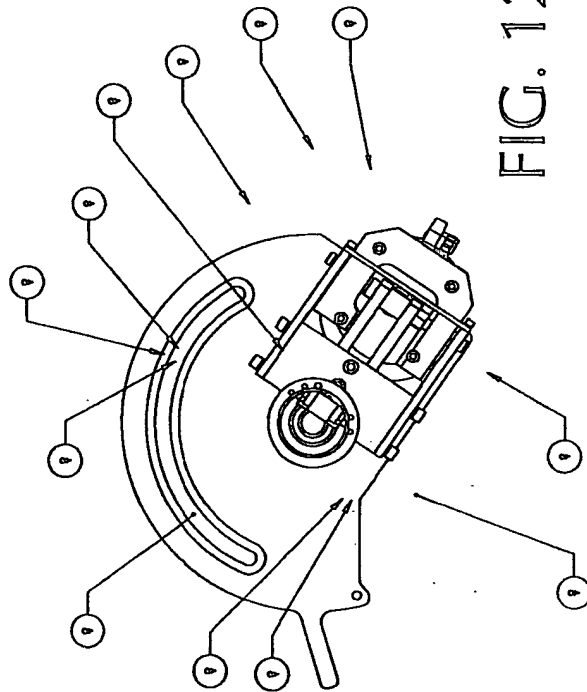
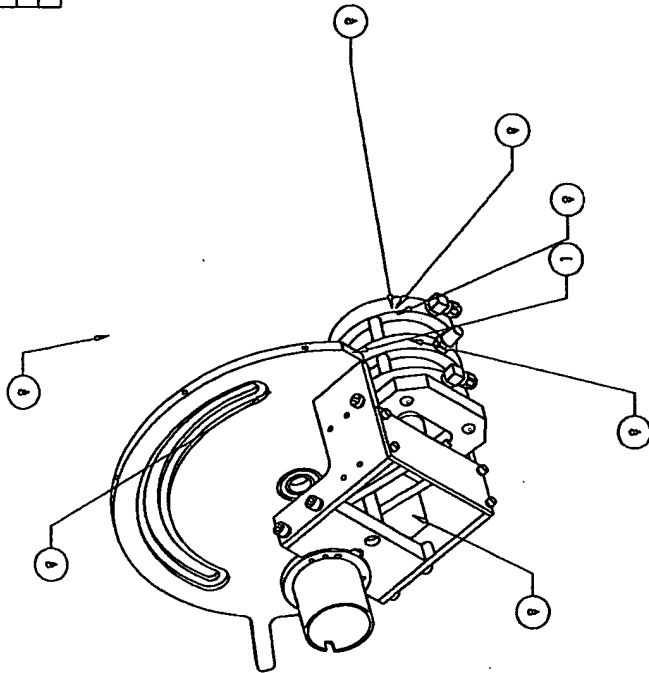


FIG. 12C

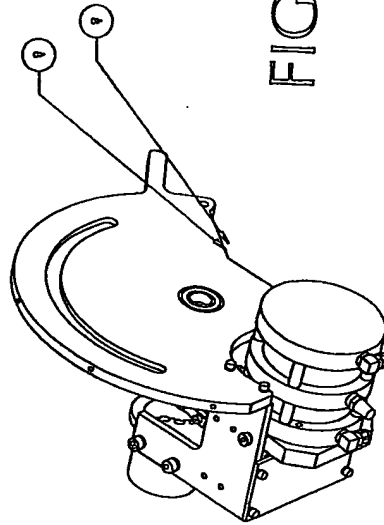


FIG. 12D

TOLERANCES
UNLESS OTHERWISE NOTED
FRACTION: 1/32
XXX: .001
XXX: .0005

HEAT TREAT/FINISH

REV	DATE	DESCRIPTION	ECN	BY
0	5/19/2003	INITIAL RELEASE		DEG

REVISIONS

NAME

SCALE	1:4	NAME	SWAGE MASTER ASSY
SCALE	SWAGE & SHAPE	DEG	
DATE	5/19/2003		

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SHEET 1 OF 1			C-18263	REV 0
ITEM NO.	QTY.	PART NO.	DESCRIPTION	
1	1	18262	CLAMP BLOCK	
2	1	18260	CYLINDER SUPPORT BLOCK	
3	1	18259	CYLINDER SUPPORT BLOCK	
4	1	18261	CLEVIS BLOCK	
5	5	9034-C73	CAPSCR, 3/8UNC SOCHD	
6	1	9034-C103	CAPSCR, 3/8UNC SOCHD	
7	1	12199-C18	BUSHING, 5/8" X 3/4" X 1"	
8	4	9448-C38	WASHER, 3/8" HI COLLOCK	
9	1	21069	PLATE-3	
10	4	9448-C25	WASHER, 1/4" HI COLLOCK	
11	4	9032-C50	CAPSCR, 1/4UNC SOCHD	
12	1	10032-C8	PIN, STEEL DOWEL	

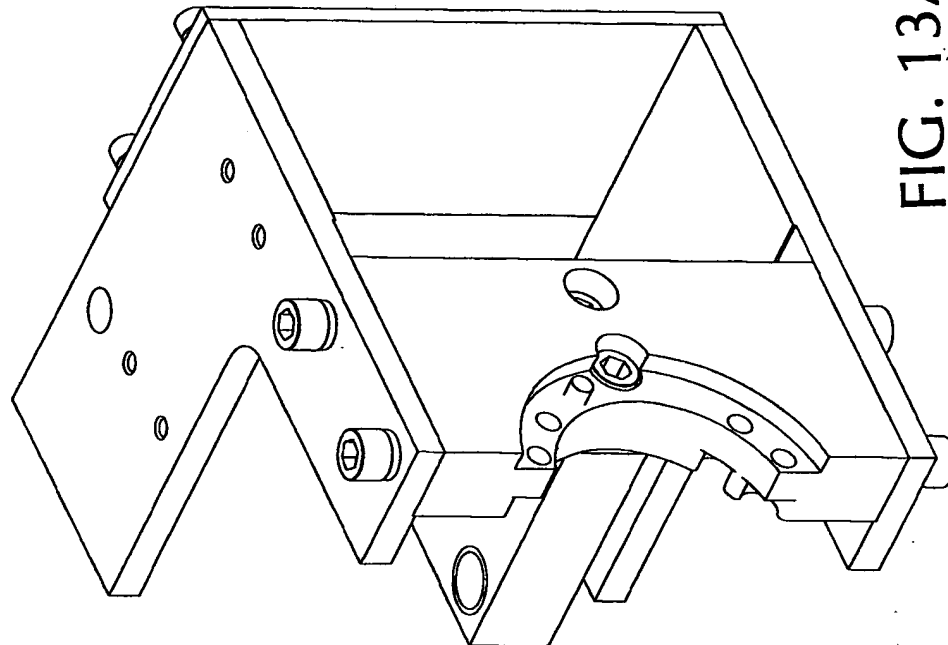


FIG. 13A

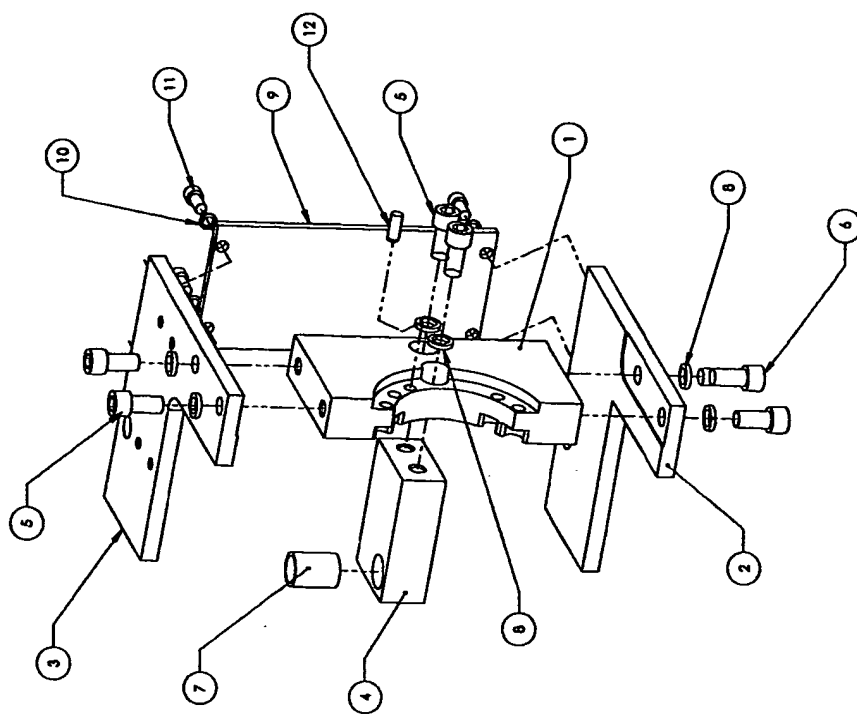


FIG. 13B

LOCK TIGHT ALL FASTENERS IN PLACE
WITH LOCKTIGHT #242
DO NOT USE LOCK WASHER

TOLERANCES UNLESS OTHERWISE NOTED		HEAT TREAT / FINISH		SCALE 1:1		NAME		SWAGE CLAMP INTO BLOCK	
MACHINED PART:				MODE: SWAGE & SHAPE					
FRACTION: 1/32"				DESIGNED BY: JSW					
X.LOX: .001				DATE: 5/24/2003					
X.LUX: .0005		MATERIAL:							
								<i>Amstrong</i> MANUFACTURING CO.	
				</					

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	18135	SADDLE WELDMENT, SWAGE
2	2	18118	BEARING FLANGE CHEVERON 1"
3	4	21246	PILLOW BLOCK, ALTERED
4	16	9448-C25	WASHER, 1/4" HI COL LOCK
5	16	9050-C63	CAPSCR, 1/4 UNF SOC HD
6	6	9007-C100	CAPSCR.3/BUNC HEX GR5 PLT
7	6	9451-C38	WASHER, 3/8 HELICAL LOCK

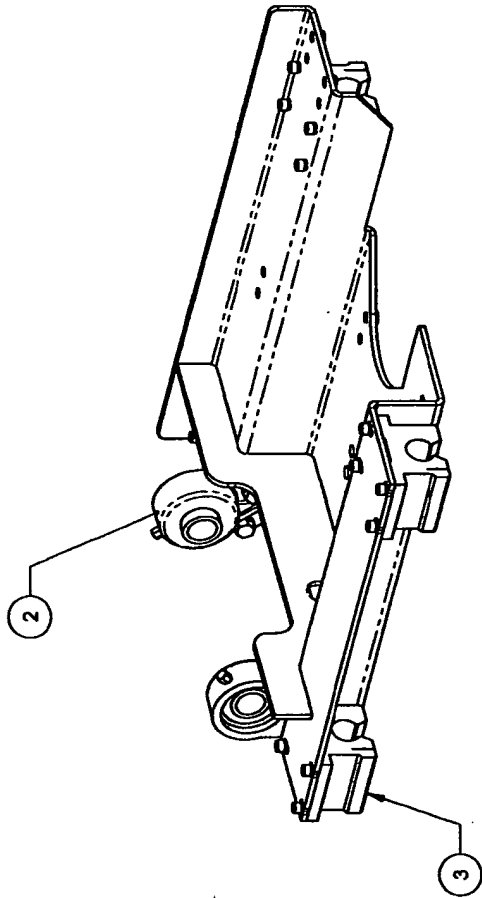


FIG. 14A

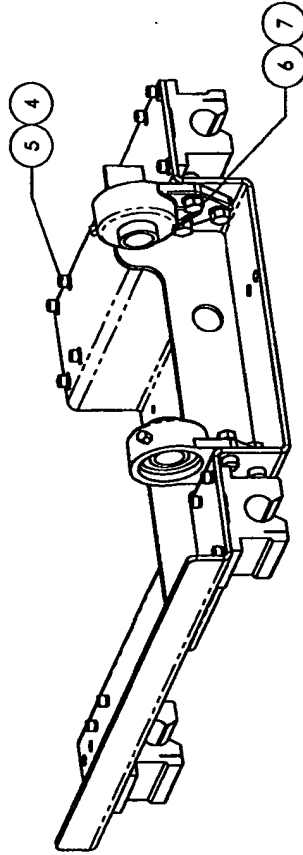



FIG. 14B

REV	DATE	DESCRIPTION	ECN	BY
2	2/2/03	REDSIGN	XXXX	JSW
1	1/15/04	ITEM 3 WAS 14591 IS 21246 ITEM 4 WAS 9448-C100 IS 9448-C25 ITEM 4 WAS 9050-C63 IS 9050-C63	XXXX	JSW
0	11/20/2003	INITIAL RELEASE	XXXX	JSW

REV	DATE	DESCRIPTION	ECN	BY
0	11/20/2003	INITIAL RELEASE	XXXX	JSW

SCALE	1:4	NAME	SUB FRAME SWAGE CARRIAGE
MODE	SWAGE & SHAPE	DRAWN BY	JSW
DATE	11/20/2003		

TOLERANCES UNLESS OTHERWISE NOTED MACHINED PARTS: FRACTION: ±1/32" DEC: ±0.01 HOLE: ±0.005 ANGLE XX°: ±0.5°		HEAT TREAT / FINISH MATERIAL
--	--	-------------------------------------


 MANUFACTURING CO.
 2133 N.W. 21ST AVE.
 PORTLAND, OR 97210
 PH: 503-228-8381
 FAX: 503-228-8384

SHEET 1 OF 2			D-21082	REV 0
ITEM NO.	QTY	DESCRIPTION		
1	1	SWITCH PLATE-1		
2	1	SWITCH PLATE-2		
3	1	SWITCH PLATE-3		
4	1	SWITCH PLATE-4		
5	1	SWITCH PLATE-5		
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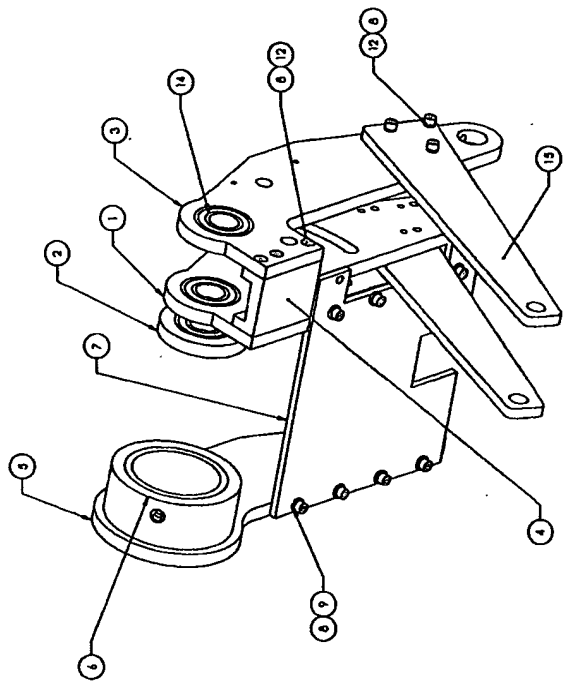


FIG. 15A

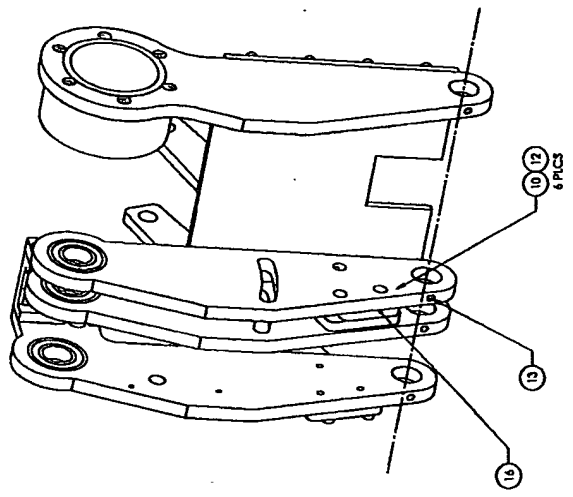


FIG. 15B

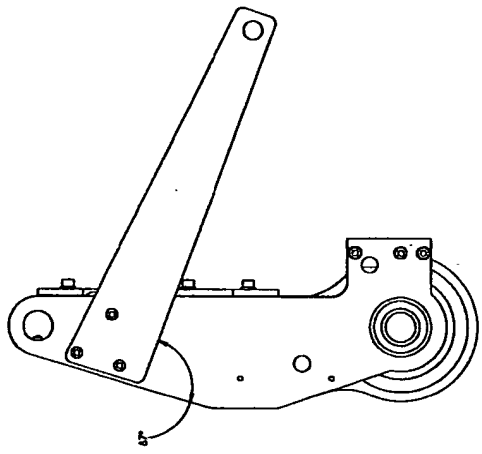


FIG. 15C

REVISION	DATE	DESCRIPTION	BY	CHK
1	1/1/00	INITIALS		
2	1/1/00	INITIALS		
3	1/1/00	INITIALS		
4	1/1/00	INITIALS		
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99	1/1/00	INITIALS		
100	1/1/00	INITIALS		

SHEET 1 OF 2			D-21125	REV 0
ITEM NO.	QTY.	PART, QTY.	DESCRIPTION	
1	1	21113	ASSY. SHAVER HEAD	
2	1	21241	CLIPPER, ALTERED	
3	1	10813	SHAVER LEVER ARM	
4	2	21114	CUT-4 BORE X 2" STROKE	
5	1	21115	PLATE, 1/2" X 1/2" X 1/2"	
6	1	21116	PLATE, 1/2" X 1/2" X 1/2"	
7	1	21119	LOCK, SHAVER PIVOT	
8	1	21138	RIGHT SHAVER FRAME	
9	1	21133	LEFT SHAVER FRAME	
10	1	21220	FLAT SHAVER FRAME	
11	2	20308-520	FLAT SHAVING 3/4" X 1/2" X 1/2"	
12	2	20308-520	FLAT SHAVING 3/4" X 1/2" X 1/2"	
13	1	10446-251	WASHER, 1/2" X 1/2" X 1/2"	
14	4	10044-251	CAPSC, 3/8" UNC X 1/2"	
15	11	10446-110	WASHER, 1/2" X 1/2" X 1/2"	
16	17	10305-520	CAPSC, 1/2" UNC X 1/2"	
17	2	10305-521	CAPSC, 1/2" UNC X 1/2"	
18	2	10305-521	CAPSC, 1/2" UNC X 1/2"	
19	2	10305-521	CAPSC, 1/2" UNC X 1/2"	
20	1	10305-520	FLAT SHAVER PIVOT	
21	1	10305-520	FLAT SHAVER PIVOT	
22	1	10305-520	FLAT SHAVER PIVOT	
23	1	10305-520	FLAT SHAVER PIVOT	
24	1	10305-520	FLAT SHAVER PIVOT	
25	1	10305-520	FLAT SHAVER PIVOT	
26	1	10305-520	FLAT SHAVER PIVOT	
27	1	10305-520	FLAT SHAVER PIVOT	
28	1	10305-520	FLAT SHAVER PIVOT	
29	1	10305-520	FLAT SHAVER PIVOT	
30	1	10305-520	FLAT SHAVER PIVOT	
31	1	10305-520	FLAT SHAVER PIVOT	
32	1	10305-520	FLAT SHAVER PIVOT	
33	1	10305-520	FLAT SHAVER PIVOT	

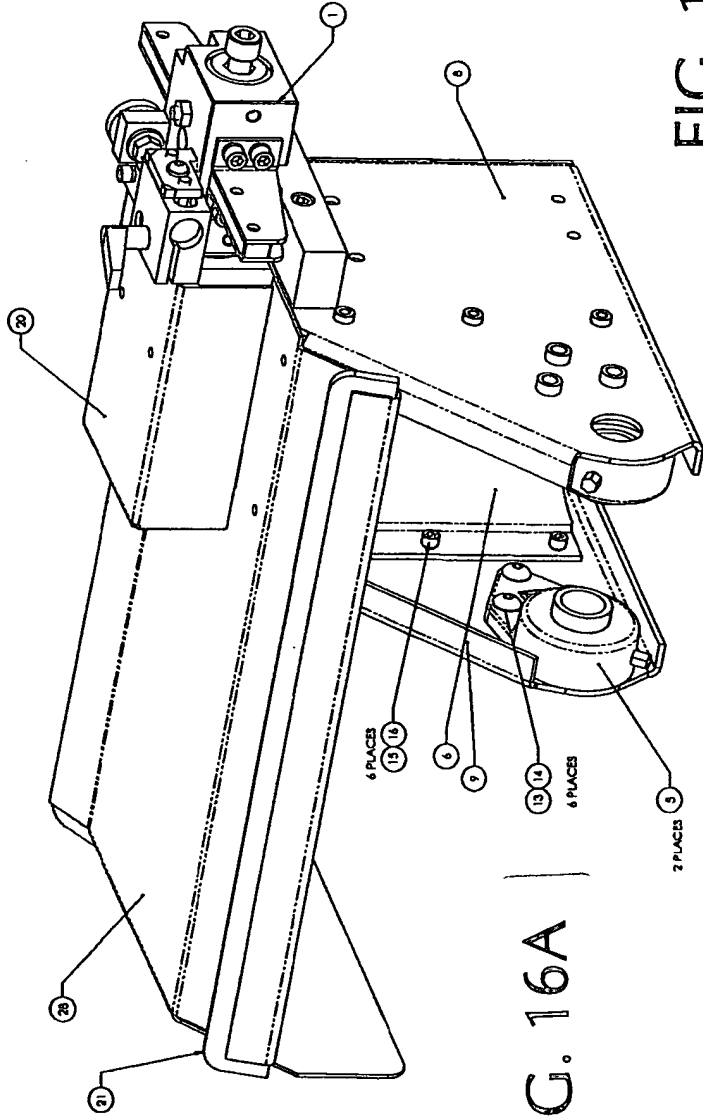


FIG. 16A

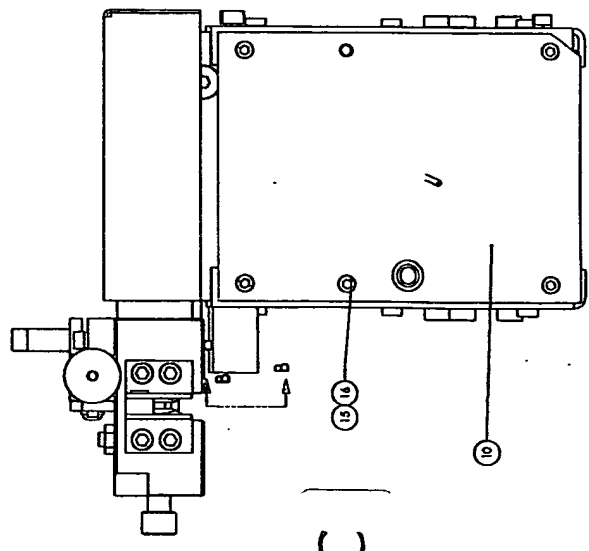
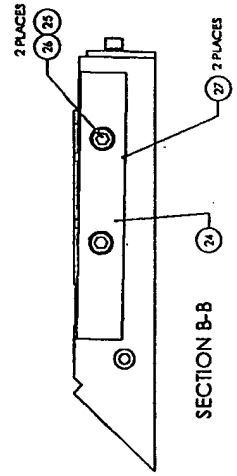


FIG. 16C



SECTION B-B

FIG. 16B

REV	DATE	DESCRIPTION	ECN	BY
1				
2				
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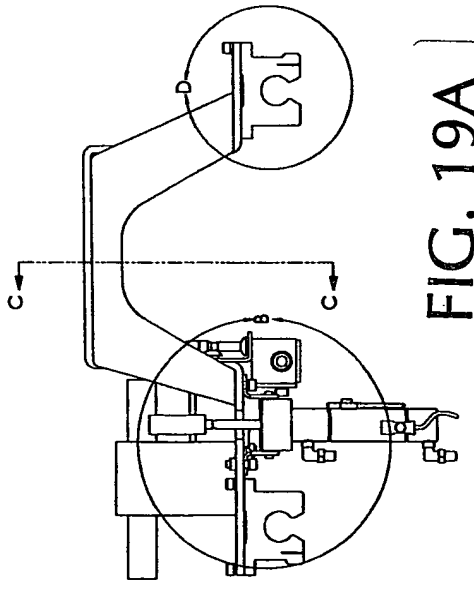
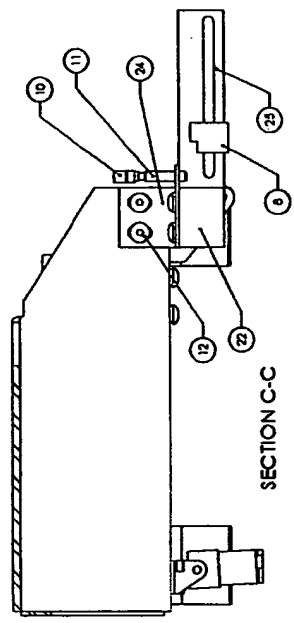


FIG. 19A

FIG. 19B



SECTION C-C

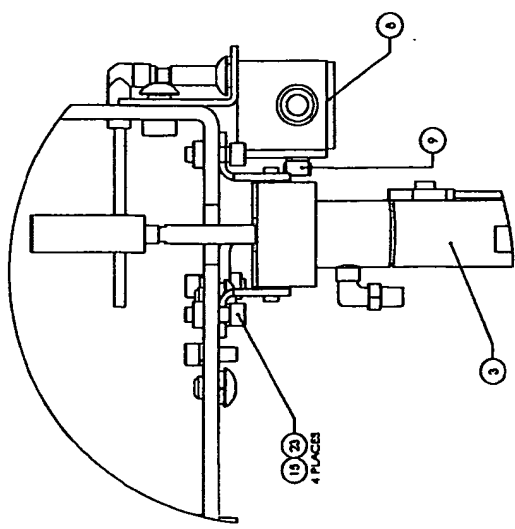
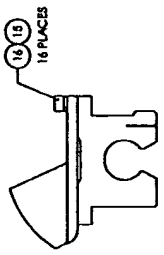


FIG. 19C



DETAIL D
SCALE 2:3

FIG. 19E

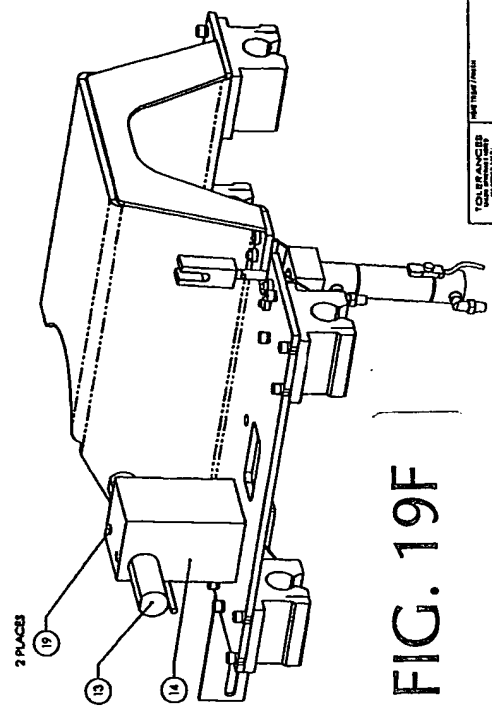


FIG. 19F

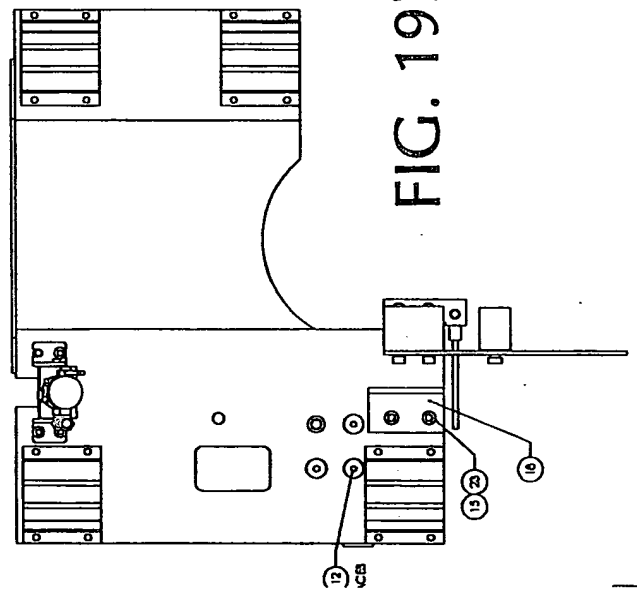


FIG. 19D

REV	DATE	DESCRIPTION	BY	CHK
1		REVISED		
2		REVISED		
3		REVISED		
4		REVISED		
5		REVISED		
6		REVISED		
7		REVISED		
8		REVISED		
9		REVISED		
10		REVISED		
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100		REVISED		

REV	DATE	DESCRIPTION	BY	CHK
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95		REVISED		
96		REVISED		
97		REVISED		
98		REVISED		
99		REVISED		
100		REVISED		

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	18154	PLATE, SAW CARRIAGE
2	1	5490	SCREW, 3/4UNC X 32.5 LONG
3	2	21311	ASSY. SAW CLAMP
4	1	21087	ROLLER, NEOPRENE DRIVE
5	2	12038-C10	RNG BSHNG 1/4 X 3/8" X 3/16"
6	1	9701-C25-4 LONG	1/4 DIA. 1018CD
7	1	21089	FLX SHAFT
8	1	21093	COVER, ENCODER CABLE
9	1	21172	BLOCK, PIVOT
10	1	18158	ROLLER, URETHANE
11	1	12050-C1	WASHER, THRUST
12	1	21173	ARM, CLAMP
13	1	9394-C160	SHldr SCREW, 3/8 DIA.
14	1	3307	SPRING, COMPRESSION, 9/16 OD
15	1	14105	KNOB, T HANDLE
16	1	12038-C2	RNG BSHNG 3/8 X 1/2 X 1/2
17	1	9394-C38	SHldr SCREW, 3/8 DIA.
18	1	6217-C25	COLLAR, SET 1/4 X 1/2
19	3	9061-C38	CAPSCR, 910 UNC BTN HD
20	24	9461-C25	WASHER, 1/4 HELICAL LOCK
21	13	9062-C63	CAPSCR, 1/4UNC SOC BTN HEAD
22	2	21286	RAIL, V. ALTERED
23	1	21287	SUPPORT, RAIL
24	1	21290	ASSY. CARBIDE SAW CARRIAGE
25	1	21289	NUT, SAW LIFT
26	1	21288	RAIL, SUPPORT, ADJUSTABLE
27	7	9062-C125	CAPSCR, 1/4UNC SOC BTN HEAD
28	4	9062-C100	CAPSCR, 1/4UNC SOC BTN HEAD
29	1	14224	BUMPER, URETHANE
30	1	9448-C50	WASHER, 1/2 HI COL LOCK
31	1	9062-C63	CAPSCR, 1/4UNC SOC HD

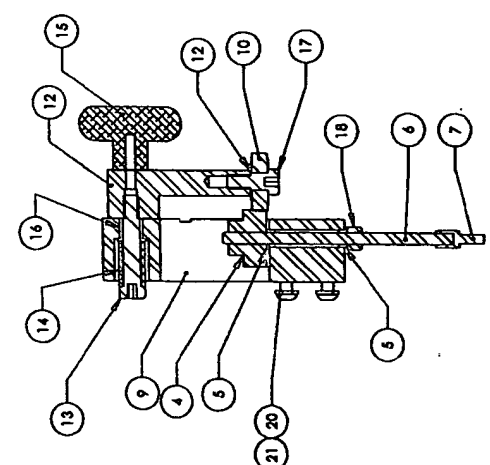


FIG. 21A

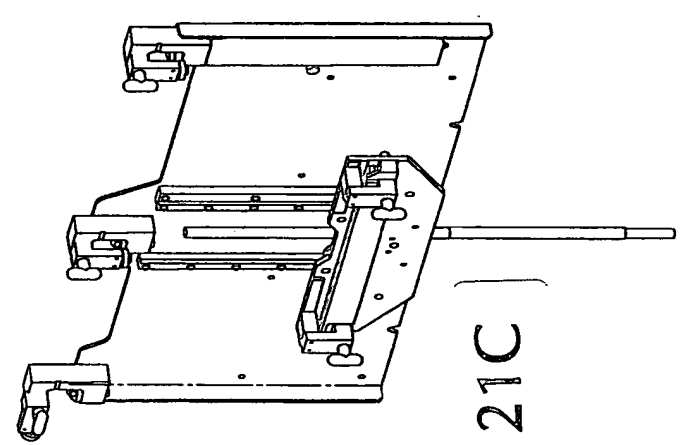


FIG. 21C

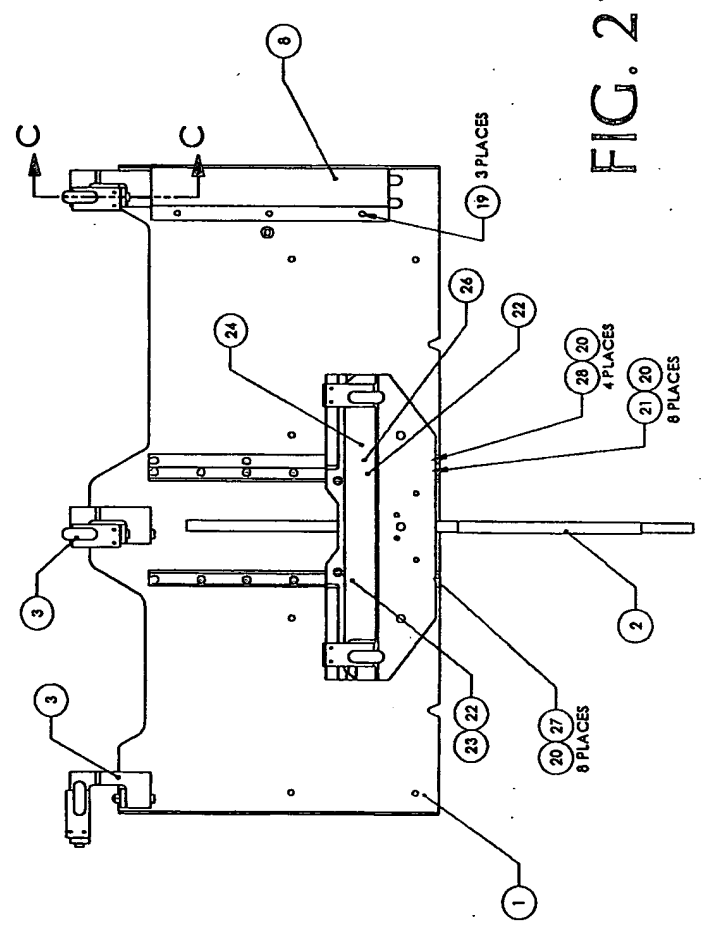
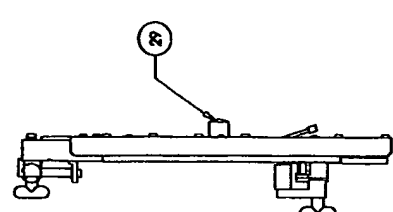


FIG. 21B

FIG. 21D



TOLERANCES
UNLESS OTHERWISE NOTED
FRACTION: 1/32
XXX: .001
XXXX: .0005

HEAT TREAT/FINISH
MATERIAL

1	11/03	DESIGNED	XXXX	T/J
0	11/12/2000	RELEAS		T/J
REV	DATE	DESCRIPTION	ECN	BY
REVISIONS				
SCALE	1:5	NAME	ASSY. SAW SUPPORT	
DATE	11/12/2000	DATE		
SWAGE & SHAPE	T/J			
DRIVEN BY				

Amstrong
MANUFACTURING CO.

SHEET 1 OF 1			D-18287		REV 0
ITEM NO.	QTY	PART NO.	DESCRIPTION		
1	1	18144	INDEX ASST		
2	1	18235	INDEX ASST		
3	1	21271	ASST. CONSOLE W/TUBE		
4	1	18032	ASST. BACKPANEL		
5	1	18174	ASST. JAW SUPPORT		
6	1	18090	COVER ELECTRICAL CAN		
7	1	18041	COVER DRIVE ACCESS		
8	10	12770	CORD GRIP 1/2" HT R24.9(2)		
9	4	16983	BOLT CAPPING		
10	4	16983	BOLT CAPPING		
11	1	21091	BOLT CAPPING		
12	1	21091	BOLT CAPPING		
13	1	21091	BOLT CAPPING		
14	1	21091	BOLT CAPPING		
15	1	21091	BOLT CAPPING		
16	2	5934-C28	SHLDR SCREW 3/8 DIA		
17	1	21297	HANDLE CRANK W/INTERREW		
18	1	21190	SUPPORT JAW LIFT HANDLE		
19	3	6317-C53	COLLAR SET 5/8 X 1 1/8		
20	3	12178	BEARING ROD END		
21	1	21181	BLOCK JAW LIFT		
22	1	21182	BLOCK JAW LIFT		
23	4	587	GRAS BEARS		
24	1	5701-C53 1/2 IN	BAR 1018 ROUND		
25	1	1431	SWITCH DISCONNECT		
26	1	1432	ACTUATOR HANDLE		
27	2	1434	CORD GRIP 3/4" HT R33.0 AS CABLE DIA		
28	2	1434	CORD GRIP 3/4" HT R33.0 AS CABLE DIA		
29	1	14401	RECEPTACLE SQUARE HANGER		
30	1	1451	BRACKET MOUNTING		
31	1	14700	FILTER REG. LUBRICATOR		
32	1	21208	ASST. VALVE MANIFOLD		
33	2	21263	WASHER SPHERICAL 3/8 BOLT		
34	7	14143	CONNECTOR ROUND NO. 2100C		
35	5	21298	EXHAUST GRUICK 1/2" HT		
36	1	21351	ASST. CABLE CRANK		
37	1	21182	HANDLE ASSEMBLED		
38	1	21328	CABLE ACTUATOR		
39	1	21329	CABLE BRACKET		
40	1	21329	CABLE BRACKET		
41	1	21329	CABLE BRACKET		
42	1	14602	LOCK PLATE INDICATOR PLATE		

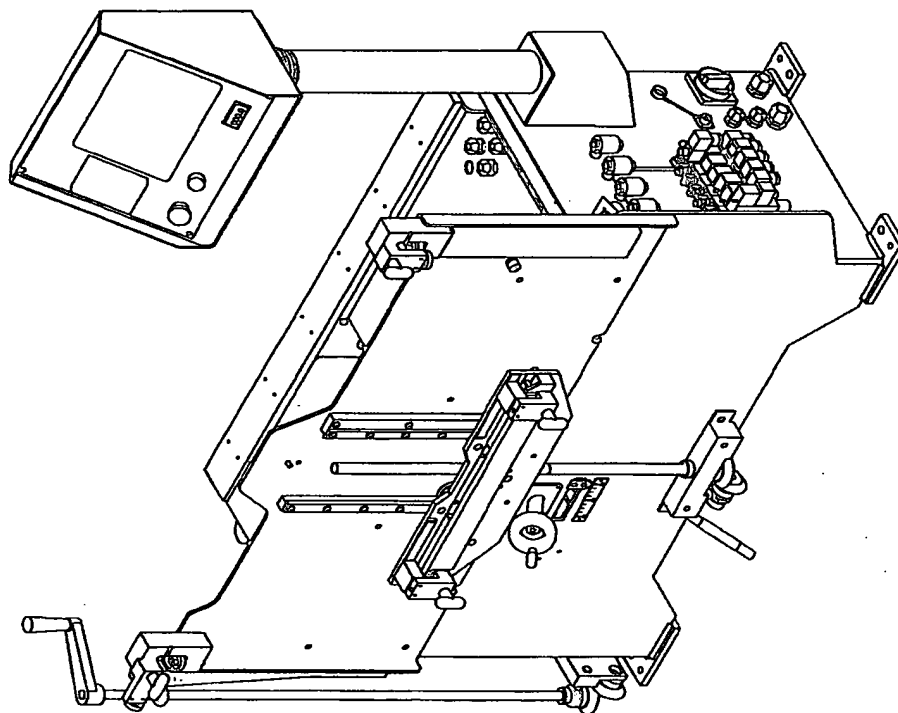


FIG. 22

REV	DATE	DESCRIPTION	BY
1	10/1/00	REVISED	1
2	10/1/00	REVISED	1
3	10/1/00	REVISED	1
4	10/1/00	REVISED	1
5	10/1/00	REVISED	1
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40	10/1/00	REVISED	1
41	10/1/00	REVISED	1
42	10/1/00	REVISED	1

REV	DATE	DESCRIPTION	BY
1	10/1/00	REVISED	1
2	10/1/00	REVISED	1
3	10/1/00	REVISED	1
4	10/1/00	REVISED	1
5	10/1/00	REVISED	1
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40	10/1/00	REVISED	1
41	10/1/00	REVISED	1
42	10/1/00	REVISED	1

SHEET 1 OF 1		D-21271	REV 0
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	21271	WHEEL CONSOLE TUBE
2	1	21272	WHEEL CONSOLE
3	1	21273	FLANGE CONSOLE
4	1	21274	FLANGE CONSOLE
5	1	21275	TOUCHSCREEN MAPLE
6	4	9241-C50	CAPSCHE, 1/10 UNC, 1/16 IN HD
7	1	9241-C10	LOCK WASHER, INTERNAL STAR LOCK
8	1	16015	BUTTON, START
9	1	16014	BUTTON, STOP
10	1	16009	ASSEMBLY, HOUR METER
11	1	16007	FACEPLATE CONSOLE
12	1	21283	CABLE INVERTER/PAO
13	1	21284	CABLE INVERTER/PAO
14	1	21285	WASHER, 1/16 UNC, 1/16 IN HD
15	1	21286	WASHER, 1/16 UNC, 1/16 IN HD
16	1	11024-C28	SET SCREW, 1/16 UNC, 1/16 IN HD

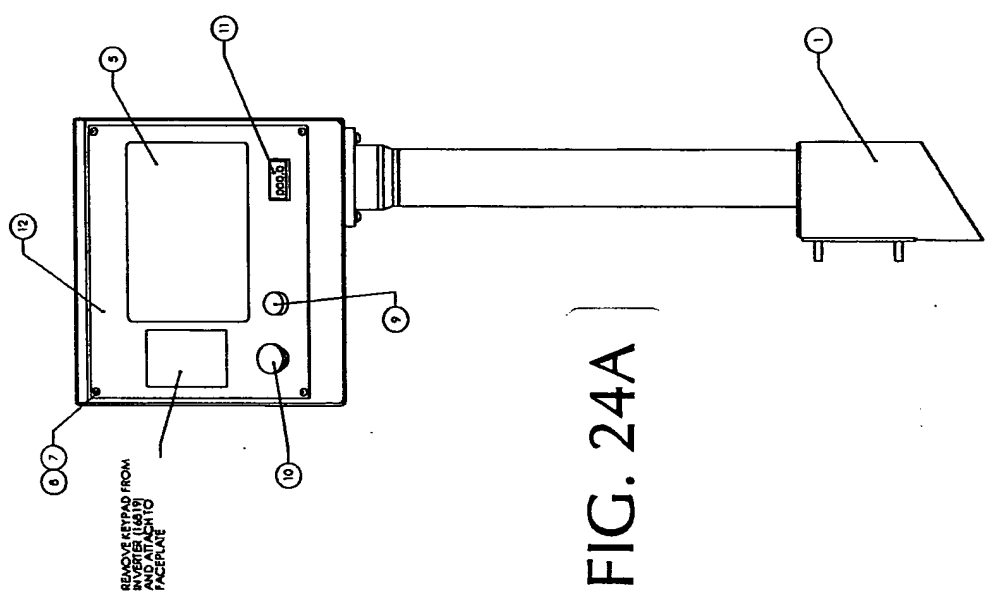


FIG. 24A

REMOVES KEYS FROM
REVERSE TURNING
AND ATTACHES
FACEPLATE

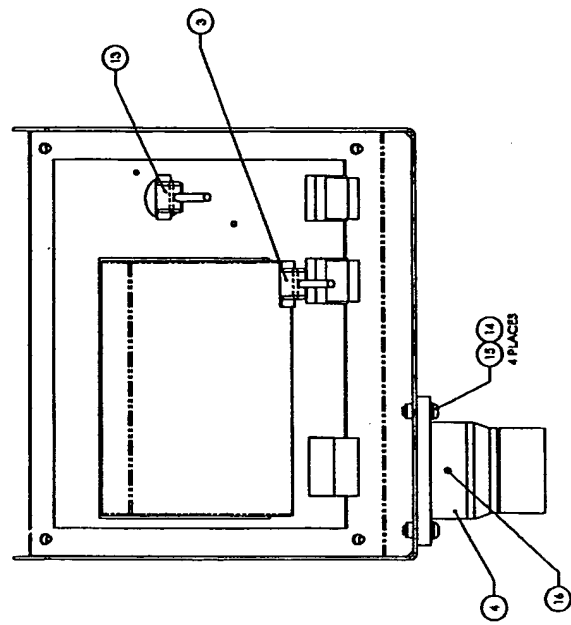


FIG. 24C

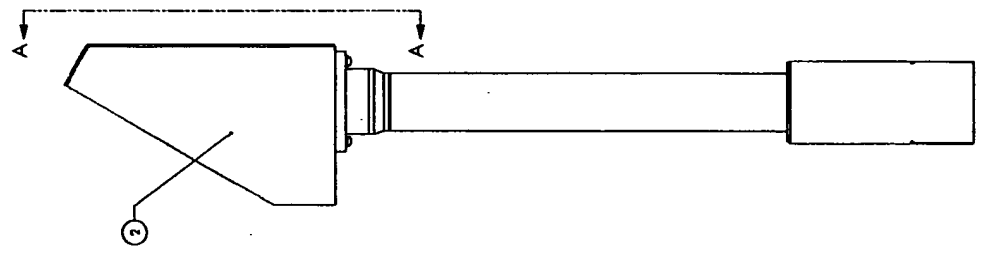


FIG. 24B

REV	DATE	DESCRIPTION	ECN	BY
1	10/1/00	WHEEL CONSOLE TUBE		
2	10/1/00	WHEEL CONSOLE		
3	10/1/00	FLANGE CONSOLE		
4	10/1/00	FLANGE CONSOLE		
5	10/1/00	TOUCHSCREEN MAPLE		
6	10/1/00	CAPSCHE, 1/10 UNC, 1/16 IN HD		
7	10/1/00	LOCK WASHER, INTERNAL STAR LOCK		
8	10/1/00	BUTTON, START		
9	10/1/00	BUTTON, STOP		
10	10/1/00	ASSEMBLY, HOUR METER		
11	10/1/00	FACEPLATE CONSOLE		
12	10/1/00	CABLE INVERTER/PAO		
13	10/1/00	CABLE INVERTER/PAO		
14	10/1/00	WASHER, 1/16 UNC, 1/16 IN HD		
15	10/1/00	WASHER, 1/16 UNC, 1/16 IN HD		
16	10/1/00	SET SCREW, 1/16 UNC, 1/16 IN HD		

REV	DATE	DESCRIPTION	ECN	BY
1	10/1/00	WHEEL CONSOLE TUBE		
2	10/1/00	WHEEL CONSOLE		
3	10/1/00	FLANGE CONSOLE		
4	10/1/00	FLANGE CONSOLE		
5	10/1/00	TOUCHSCREEN MAPLE		
6	10/1/00	CAPSCHE, 1/10 UNC, 1/16 IN HD		
7	10/1/00	LOCK WASHER, INTERNAL STAR LOCK		
8	10/1/00	BUTTON, START		
9	10/1/00	BUTTON, STOP		
10	10/1/00	ASSEMBLY, HOUR METER		
11	10/1/00	FACEPLATE CONSOLE		
12	10/1/00	CABLE INVERTER/PAO		
13	10/1/00	CABLE INVERTER/PAO		
14	10/1/00	WASHER, 1/16 UNC, 1/16 IN HD		
15	10/1/00	WASHER, 1/16 UNC, 1/16 IN HD		
16	10/1/00	SET SCREW, 1/16 UNC, 1/16 IN HD		

SHEET 1 OF 1			C-18258	REV 1
ITEM NO.	QTY	PART NO.	DESCRIPTION	
1	1	18257	GEAR MOTOR, RIGHT ANGLE, 3 PHASE, 38 RPM	
2	1	18245	LINK ARM	
3	4	45381	PILLOW BLOCK BEARING	
4	1	21327	ARM, LOWER LINK	
5	1	18252	T-NUT, ACME	
6	1	18261	CAP, T-NUT SLIDER	
7	1	18263	ASSY, GEARBOX AND SCREW	
8	1	18046	SHAFT, EXTENSION	
9	1	18060	SHAFT, PIVOT	
10	2	18244	BLOCK, SHORT RISER	
11	1	18247	BLOCK, CRANK ARM	
12	2	29374-C63	SHLD SCREW, 3/8 DIA.	
13	1	18043-C4	KEY, SQ	
14	1	19139-C28	SET SCREW, 1/4 UNC CLIP PT	
15	2	18260	SENSOR, 8 MM PNP SHIELDED	
16	1	19032-C60	CAPSCR, 1/4 UNC SOC HD	
17	1	18689	CAM FOLLOWER, 1 IN. DIA.	
18	1	18248	ARM, UPPER LINK	
19	2	18047	BLOCK, RISER	
20	1	18249	LINK, DRAG	
21	1	18260	BLOCK, INDEX TO SADDLE MTG	
22	1	21326	POINTER	
23	8	12038-C1	FLNG BSHNG 3/8" X 1/2" X 1/4"	
24	2	29374-C160	SHLD SCREW, 3/8 DIA.	
25	2	29316-C31	NUT, 3/16 UNC ELASTIC LOCK	
26	1	18264	SHAFT, PIVOT ARM	
27	8	29431-C38	WASHER, 3/8 HELICAL LOCK	
28	1	19007-C100	CAPSCR, 3/8 UNC HEX GR8 PLT	
29	7	19007-C126	CAPSCR, 3/8 UNC HEX GR8 PLT	
30	5	29448-C10	WASHER, 10 HI COL LOCK	
31	3	19030-C173	CAPSCR, 10 UNC SOC HD	
32	2	29030-C63	CAPSCR, 10 UNC SOC HD	
33	4	29447-C10	LOCK WASHER, INTERNAL STAR LOCK	
34	2	19030-C38	CAPSCR, 10 UNC SOC HD	
35	2	18296	CABLE, SENSOR	
36	1	21304	SHAFT, FLEXIBLE DRIVE	
37	1	21319	PLATE, CARRIER	
38	2	3043T11	NUT, 1/2 UNC ELASTIC LOCK	
39	4	29516-C6	CAPSCR, 1/2 UNC SOC HD	
40	4	29028-C50	CAPSCR, 1/2 UNC SOC HD	
41	1	21328	CABLE ACTUATOR	
42	1	21330	CABLE BRACKET	
43	2	29500-C10	10 UNC HEX NUT	

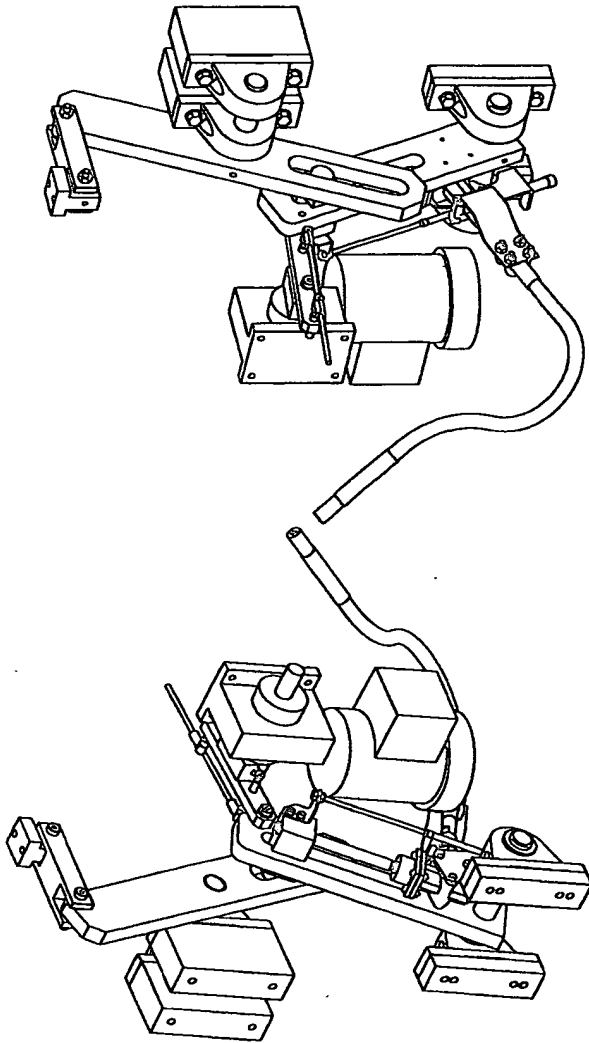


FIG. 23A

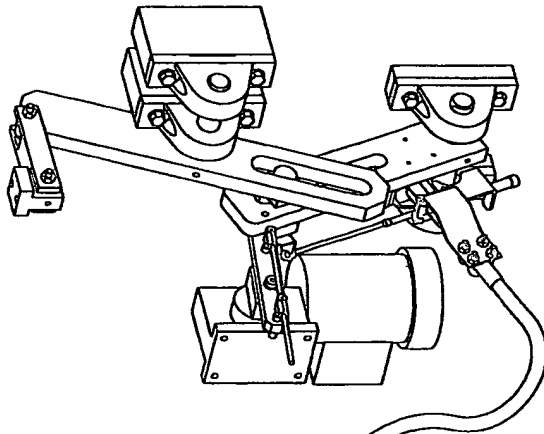


FIG. 23B

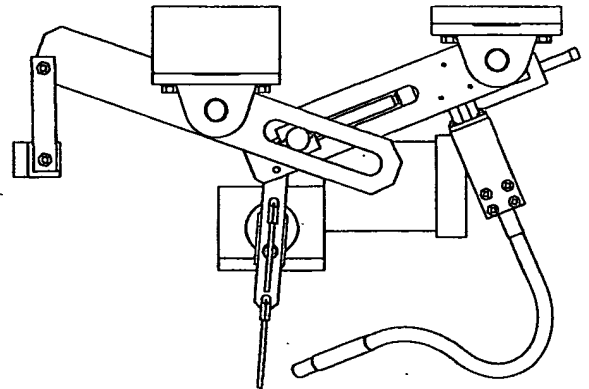


FIG. 23C

1	2/17/04	ADDED ITEM #34	0000	QW
0	5/20/2003	INITIAL RELEASE	0000	LAH
REV	DATE	DESCRIPTION	ECN	BY
7				
REVISIONS				
REV	DATE	DESCRIPTION	ECN	BY
7				
INDEX ASSY				
REV	DATE	DESCRIPTION	ECN	BY
7				
MATERIAL				
REV	DATE	DESCRIPTION	ECN	BY
7				
TOLERANCES				
UNLESS OTHERWISE SPECIFIED				
FRACTION: 1/32"				
X.XX: .001				
X.XXX: .0005				
HEAT TREAT / FINISH				
MATERIAL				
MANUFACTURING CO.				